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10/718,478

11/18/2003

Jin-Sung Kim

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CHRISTIE, PARKER & HALE, LLP
PO BOX 7068
PASADENA, CA 91109-7068

EXAMINER

HODGE, ROBERT W

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Please find below and/or attached an Office communication concerning this application or proceeding.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JIN-SUNG KIM, JONG-WOOK LEE, KWANG-SIK KIM,
YOUNG-GYU KIM, JE-YUN KIM, and JONG-SEOB KIM

Appeal 2009-0100040
Application 10/ 718,478
Technology Center 1700

Decided: March 24, 2010

Before MICHAEL P. COLAIANNI, BEVERLY A. FRANKLIN, and
KAREN M. HASTINGS, *Administrative Patent Judges*.

FRANKLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-4, 8, 10, 11, 13, 15, and 17. We have jurisdiction under 35 U.S.C. § 6(b).

STATEMENT OF THE CASE

Claims 1 and 15 are representative of the subject matter on appeal and are set forth below:

1. An electrolyte for a lithium secondary battery comprising:

a non-aqueous organic solvent; and

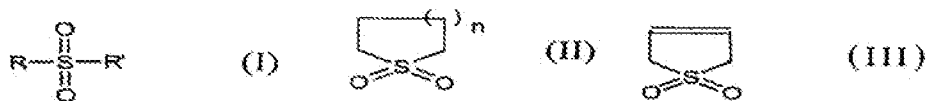
a vinyl sulfone

where the vinyl sulfone is present in an amount from 0.05 to 0.5 wt% on the basis of total weight of the electrolyte.

15. An electrolyte for a lithium secondary battery comprising:

a non-aqueous organic solvent; and

a sulfone based organic compound represented by the following Formulae (I), (II), and (III), and mixtures thereof:



where R and R' are independently selected from the group consisting of primary alkyl groups, secondary alkyl groups, tertiary alkyl groups, alkenyl groups, aryl groups; halogen substituted primary alkyl groups, halogen substituted secondary alkyl groups, halogen substituted tertiary alkyl groups, halogen substituted alkenyl groups, and halogen substituted aryl groups, and n is from 0 to 3, wherein the amount of the sulfone based organic compound is from 0.1 to 5 weight% based on the total amount of electrolyte.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Hamamoto¹

JP 11-329494

Nov. 30, 1999

THE REJECTION

Claims 1-4, 8, 10, 11, 13, 15, and 17 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hamamoto.

ISSUE(S)

1. Did the Examiner err in determining that the claimed range of “from 0.05 to 0.5 wt%” (claim 1) is anticipated by Hamamoto?

We answer this question in the negative.

2. Did the Examiner err in determining that the claimed range of “from 0.1 to 5 wt%” (claim 15) is anticipated by Hamamoto?

We answer this question in the negative.

FINDINGS OF FACT

Hamamoto discloses a vinyl sulfone derivative in an amount of from “0.01 to 20% by weight” and “in particular, 0.1 to 10% by weight”. Hamamoto, para. [0014].

Hamamoto, in example 2, discloses an amount of divinyl sulfone of “0.5% by weight”. Hamamoto, para. [0026].

¹ We use the English translation translated by FLS, Inc. that was made of record on May 21, 2008.

Appellants do not argue differences in the compound claimed; rather, Appellants argue differences in the amount of compound claimed. See *generally* Brief and Reply Brief.

PRINCIPLES OF LAW

If the claims are directed to a narrow range, and the reference teaches a broad range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with “sufficient specificity” to constitute an anticipation of the claims. *See, e.g., Atofina v. Great Lakes Chem. Corp.*, 441 F.3d 991, 999 (Fed. Cir. 2006) wherein the court held that a reference temperature range of 100-500 degrees C did not describe the claimed range of 330-450 degrees C with sufficient specificity to be anticipatory. Further, while there was a slight overlap between the reference’s preferred range (150-350 degrees C) and the claimed range, that overlap was not sufficient for anticipation.

ANALYSIS

Appellants’ arguments are directed to claims 1 and 11 (we select claim 1 as representative of this group) and claim 15. Hence, we limit our consideration to claims 1 and 15 in this appeal. 37 C.F.R. § 41.37(c)(1)(vii).

Appellants argue that Hamamoto discloses the presence of a vinyl sulfone derivative in an electrolytic solution in an amount ranging from 0.1 to 10 wt% or from 0.01 to 20 wt%. Appellants argue that Hamamoto discloses no additional ranges of amounts of the vinyl sulfone derivative, and does not disclose ranges similar to the 0.05 to 0.5 wt% range of vinyl sulfone or the 0.1 to 5 wt% range of a sulfone based organic compound as

recited in the present claims. Appellants state that the fact that Hamamoto may completely encompass one of the recited ranges does not constitute a disclosure with sufficient specificity to be anticipatory, and refer to *Atofina v. Great Lakes Chem. Corp.*, 441 F.3d 991, 999 (Fed. Cir. 2006). Br. 4. Notably, Appellants do not argue differences in the compound claimed; rather, Appellants argue differences in the amount of compound claimed. See *generally* Brief and Reply Brief.

The Examiner's position is that one of the ranges (0.1 to 10 wt%) disclosed in Hamamoto has a common end point with the claimed range of "0.1 to 5 weight%" (claim 15). The Examiner's position is also that Example 2 of Hamamoto discloses an amount of "0.05" which is an endpoint of the claimed range of from 0.05 to 0.5wt% (claim 1). Ans. 3.

A summary of the claimed ranges and the values taught by Hamamoto is set forth below:

Claim 1	Hamamoto
.05-.5	.5 Example 2, p. 12

Claim 15	Hamamoto
.1-5	Range of 0.1-10 Para. [0014] Example 1: 2.0 p. 10 Example 2: 0.5 p. 12 Example 4: 2.0 p. 12-13 Example 5: 2.0 p. 13 Example 6: 2.0 p. 14 Example 7: 3.0 p. 14

Unlike the fact scenario in *Atofina*, in the instant case, Example 2 of Hamamoto mirrors an endpoint of claim 1. Also, Hamamoto's disclosed range of 0.1 to 10 shares an endpoint with the claimed range of 0.1 to 5 (claim 15). Hence, we agree with the Examiner that because Hamamoto discloses claimed endpoints, there is sufficient specificity for anticipation. Furthermore, as shown in the table above, some Examples fall within a claimed range. *Compare Atofina*, 441 F.3d at 999.

CONCLUSIONS OF LAW

The Examiner did not err in determining that the claimed range of "from 0.05 to 0.5 wt%" (claim 1) is anticipated by Hamamoto.

The Examiner did not err in determining that the claimed range of "from 0.1 to 5 wt%" (claim 15) is anticipated by Hamamoto.

DECISION

The rejection is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED

Pl initial:
sld

Appeal 2009-010040
Application 10/718,478

CHRISTIE, PARKER & HALE, LLP
PO BOX 7068
PASADENA CA 91109-7068